Surface Mount Glass Passivated Junction Rectifier



Patented*

*Glass-plastic encapsulation is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

DO-213AB

FEATURES

- Superectifier structure for high reliability condition
- Patented glass-plastic encapsulation technique
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

MECHANICAL DATA

Case: DO-213AB, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

PRIMARY CHARACTERISTICS		
$I_{F(AV)}$		1.0 A
V_{RRM}	BYM-50-1000 GL41A-Y	50 V to 1000 V 50 V to 1600 V
I_{FSM}		30 A
I_R		10 µA
E_{AS}		5 mJ
V_F		1.1 V, 1.2 V
T_J max.		175 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	BYM 10-50	BYM 10-100	BYM 10-200	BYM 10-400	BYM 10-600	BYM 10-800	BYM 10-1000			UNIT
STANDARD RECOVERY DEVICE: 1ST BAND IS WHITE		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
Polarity color bands (2nd band)		Gray	Red	Orange	Yellow	Green	Blue	Violet	White	Brown	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	1300	1600	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	910	1120	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	1300	1600	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	1.0									A

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)											
PARAMETER	**SYMBOL**	**BYM 10-50**	**BYM 10-100**	**BYM 10-200**	**BYM 10-400**	**BYM 10-600**	**BYM 10-800**	**BYM 10-1000**			**UNIT**
STANDARD RECOVERY DEVICE: 1ST BAND IS WHITE		**GL41A**	**GL41B**	**GL41D**	**GL41G**	**GL41J**	**GL41K**	**GL41M**	**GL41T**	**GL41Y**	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30									A
Maximum full load reverse current full cycle average at T_A = 75 °C	$I_{R(AV)}$	30									µA
Non-repetitive peak reverse avalanche energy at T_J = 25 °C, I_{AS} = 1 A, L = 10 mH	E_{AS}	5							-		µA
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175									°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)												
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**BYM 10-50**	**BYM 10-100**	**BYM 10-200**	**BYM 10-400**	**BYM 10-600**	**BYM 10-800**	**BYM 10-1000**			**UNIT**
			GL41A	**GL41B**	**GL41D**	**GL41G**	**GL41J**	**GL41K**	**GL41M**	**GL41T**	**GL41Y**	
Maximum instantaneous forward voltage	1.0 A	V_F	1.1					1.2				V
Maximum DC reverse current at rated DC blocking voltage	T_A = 25 °C T_A = 125 °C	I_R	10 50									µA
Typical junction capacitance	4.0 V, 1 MHz	C_J	8.0									pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
PARAMETER	**SYMBOL**	**BYM 10-50**	**BYM 10-100**	**BYM 10-200**	**BYM 10-400**	**BYM 10-600**	**BYM 10-800**	**BYM 10-**			**UNIT**
		GL41A	**GL41B**	**GL41D**	**GL41G**	**GL41J**	**GL41K**	**GL41M**	**GL41T**	**GL41Y**	
Typical thermal resistance	$R_{\theta JA}$ $R_{\theta JT}$	75 (1) 30 (2)									°C/W

Notes:

(1) Thermal resistance from junction to ambient, 0.24 x 0.24" (6.0 x 6.0 mm) copper pads to each terminal

(2) Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 x 6.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	REFERRED PACKAGE	BASE QUANTITY	DELIVERY MODE
BYM10-600-E3/96	0.114	96	1500	7" diameter plastic tape and reel
BYM10-600-E3/97	0.114	97	5000	13" diameter plastic tape and reel
GL41J-E3/96	0.114	96	1500	7" diameter plastic tape and reel
GL41J-E3/97	0.114	97	5000	13" diameter plastic tape and reel
BYM10-600HE3/96 (1)	0.114	96	1500	7" diameter plastic tape and reel
BYM10-600HE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel
GL41JHE3/96 (1)	0.114	96	1500	7" diameter plastic tape and reel
GL41JHE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

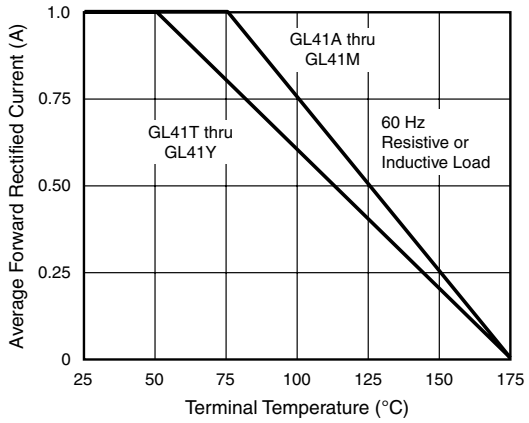


Figure 1. Forward Current Derating Curve

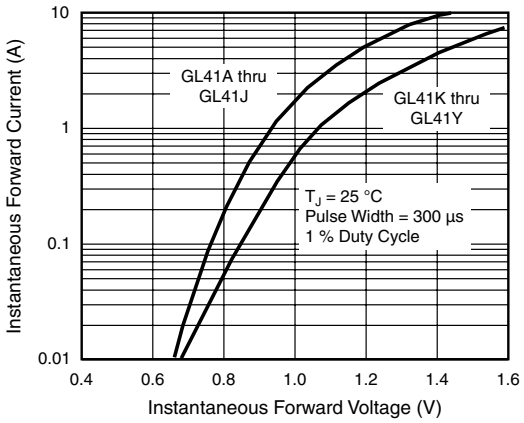


Figure 3. Typical Instantaneous Forward Characteristics

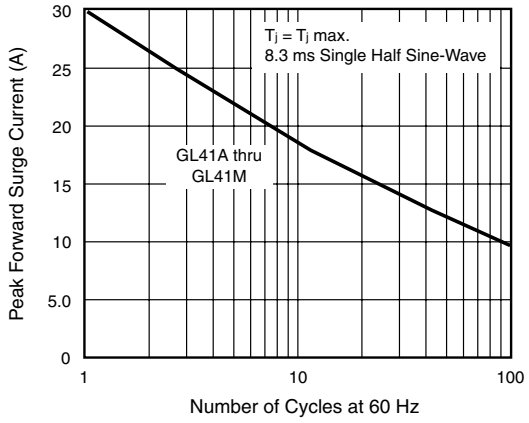


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

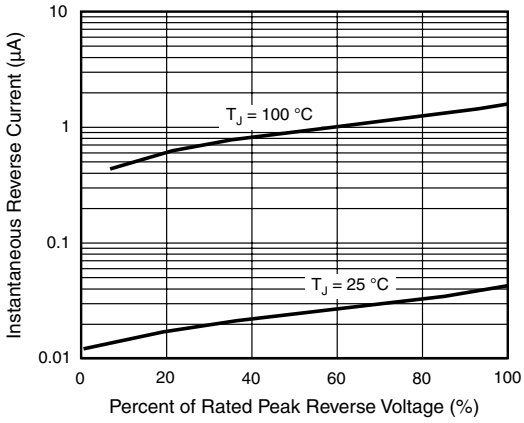


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

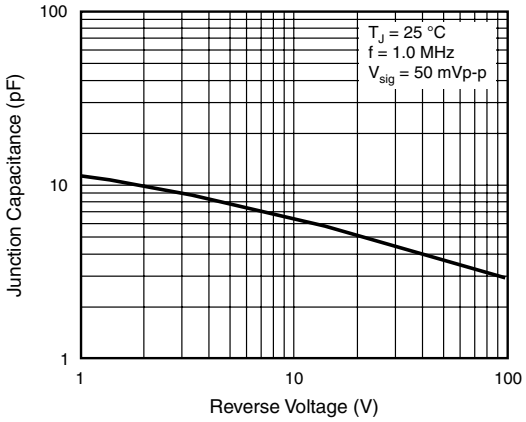


Figure 5. Typical Junction Capacitance

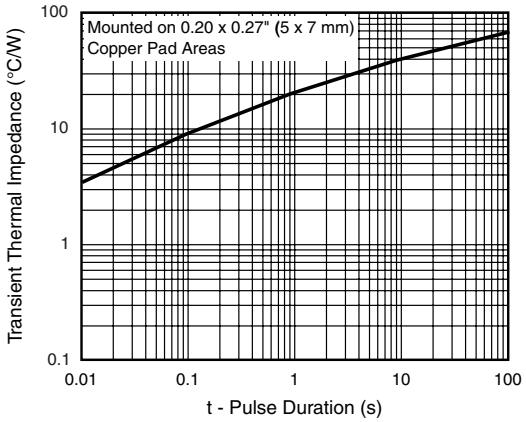
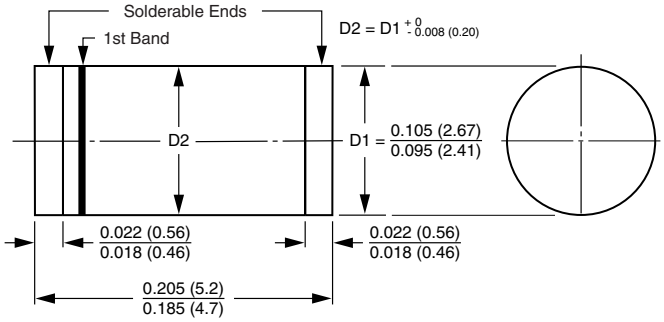


Figure 6. Typical Transient Thermal Impedance

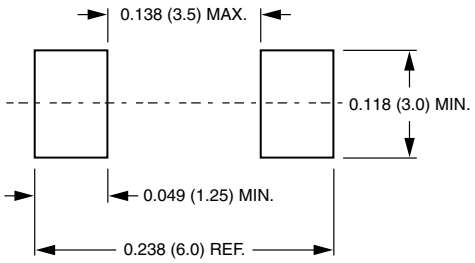
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AB



1st band denotes type and positive end (cathode)

Mounting Pad Layout



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